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2 May 1957

CMCC Doc. No. 151X5.533  
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Dear Dick:

We are forwarding herewith eight copies of Monthly Progress Letter No. 21, covering the work performed on System No. 3 during the period extending from 4 March to 4 April 1957.

Sincerely,

*Burt*

Burt

Enclosures:

CMCC Doc. No. 163X5.37  
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Monthly Progress Letter No. 21  
Contract No. A-101  
System 3

4 March to 4 April 1957

CMCC Document No. 163X5.37

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1. General

a. During the interval covered by this progress letter, the major effort continued to be directed toward the production of systems having improved sensitivity. Three systems were delivered during this interval, and the improved sensitivity values, obtained on an individual receiver basis in conformance with the procedures outlined in the previous progress letter, are tabulated in this report.

b. In addition, an alternate installation of the system in the aircraft has been undertaken, and present planning calls for flight testing of the new installation to begin during the next reporting interval.

c. The production status, the progress achieved in further increasing system sensitivity, and a description of the alternate system installation are described below.

2. Production Status

a. As indicated above, three systems were delivered during this reporting interval. In addition, the repair and modification (to include certain system improvements) of three systems returned from the field was undertaken.

b. One test set, received for repair, will be delivered during the next reporting interval.

3. System Improvements

a. In conformance with the objective of obtaining the maximum practical sensitivity of the system, the gain of each receiver is adjusted, during final testing, to a level which results in a limited number of incipient lock-on indications. Typical measured input-signal levels at which lock-on occurs under these conditions are indicated in table 1.

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is gated by pulses applied directly to the r-f amplifier stages, the effect of gating the mixer stage following the r-f amplifier is being investigated. Preliminary results of these investigations appear favorable.

c. An improved method of line adjustments, which will result in more uniform frequency response of the r-f distribution line, is also being investigated. The results of this investigation will be included in the next progress letter.

#### 4. Alternate Installation of System and Flight Test Plans

The installation of a system in the rearward portion of the aircraft, in place of the nose installation, has been completed by the airframe contractor. This installation includes a scimitar antenna located in the tail fin of the aircraft. A broadband matching transformer is included to provide appropriate impedance transformation. Flight testing of this system installation is scheduled for the next reporting interval.

#### 5. Planning

During the next reporting interval, the major effort will be directed toward completing the design improvements indicated above, and toward continuing the production program as scheduled.

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